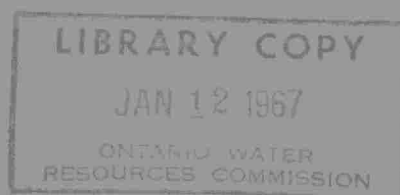




THE
ONTARIO WATER RESOURCES
COMMISSION
WATER POLLUTION SURVEY
of the
TOWN OF VANKLEEK HILL
COUNTY OF PRESCOTT

1966



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THE
ONTARIO WATER RESOURCES
COMMISSION

Report on a
WATER POLLUTION SURVEY

of the
TOWN OF VANKLEEK HILL

in the
COUNTY OF PRESCOTT

Division of Sanitary Engineering

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WATER POLLUTION SURVEY

of the

TOWN OF VANKLEEK HILL

<u>INDEX</u>	<u>PAGE NO.</u>
INTRODUCTION	1
INTERVIEWS	1
TOWN OF VANKLEEK HILL	1
WATER SUPPLY	2
SURFACE WATER DRAINAGE	2
SEWAGE DISPOSAL FACILITIES	3
INDUSTRIAL WASTE DISPOSAL	3
MUNICIPAL REFUSE DISPOSAL SITE	3
SAMPLING PROCEDURE	4
SAMPLE RESULTS	4
SUMMARY	5
RECOMMENDATION	5

APPENDICES

INTERPRETATION OF ANALYSES
LABORATORY RESULTS
MAP OF THE TOWN OF VANKLEEK HILL

WATER POLLUTION SURVEY

of the

TOWN OF VANKLEEK HILL

INTRODUCTION

A water pollution survey of the Town of Vankleek Hill was performed by OWRC staff on May 24, 1966, in order to locate any existing and potential sources of surface-water pollution. Appended to this report is a map of the town showing the locations of sampling points.

INTERVIEWS

Discussions were held with the following officials during this survey:

Town of Vankleek Hill: Mr. C. E. Barton, Clerk-Treasurer;
Mr. E. E. Seguin, Works Foreman.

Prescott and Russell Health Unit: Dr. R. G. Grenon,
Medical Officer of Health
and Director;
Mr. R. Leblanc, Public Health
Inspector.

TOWN OF VANKLEEK HILL

This municipality is located on Highway 34, six miles south of Hawkesbury. According to the 1966 Municipal Directory, the population of the town was approximately 1,756 during the previous year. The area of the town is approximately 593 acres.

Vankleek Hill is primarily a residential town with a commercial area located near the intersection of Main Street and Highway 34. Industrial activity is not extensive, with the only

firm reported being Norda Limited which refines pepper and spices. Student populations at the local schools were reported as follows:

Elementary public school	-	225
Elementary separate school	-	330
Secondary school	-	500

Although the foregoing figures are approximate, it is noteworthy that some of these students live beyond the town and therefore are not included in the population figure for the municipality. A convalescent hospital is located in Vankleek Hill.

WATER SUPPLY

The municipality has been served by private dug and drilled wells. Reportedly, many of these wells have become polluted, particularly in instances where wells are located downslope from septic tank systems and/or privies.

The construction of water works to serve the central part of the town was approaching completion at the time of this survey. The OWRC has provided assistance in developing ground-water supplies for this purpose. Chlorination will be provided.

SURFACE WATER DRAINAGE

The central part of Vankleek Hill is situated on a comparatively high tract of land with the terrain sloping downward from this plateau-like area. The eastern part is drained to Little Rideau Creek, and the western part is drained generally to West Hawkesbury Creek. Storm sewers and ditches are utilized.

SEWAGE DISPOSAL FACILITIES

Although septic tank systems and privies are used to a considerable extent within the town, reportedly there are instances where sewage is discharged to municipal storm sewers and ditches. Some environmental problems have occurred when sewage has surfaced from septic tank systems. It is not improbable that limited space for the installing of private sewage disposal systems has contributed to such problems. The inspection of new septic tank systems has been generally curtailed by the Prescott and Russell Health Unit due to the shortage of staff available for the environmental sanitation programme.

INDUSTRIAL WASTE DISPOSAL

No industrial or commercial outfalls to watercourses were observed. The only industrial firm reported was Norda Limited which refines pepper and has a daily water use of approximately 20,000 gallons. It is probable that any liquid waste produced by this firm is discharged to municipal storm sewers.

MUNICIPAL REFUSE DISPOSAL SITE

The refuse disposal site utilized by the town is located in Lot 13, Concession 6, in the Township of West Hawkesbury. The possibility of this operation creating a water pollution problem is remote.

SAMPLING PROCEDURE

The weather was clear on the day of this survey, with the maximum atmospheric temperature being approximately 80 degrees Fahrenheit.

The locations of sampling points are shown on the appended map of the town.

SAMPLE RESULTS

Appended to this report are the laboratory results, and a description of the various analyses and their significance.

The laboratory results reveal that the presence of sewage in the Main Street storm sewer outfall exerts an adverse effect on the quality of the receiving stream which is a tributary of Little Rideau Creek.

The flow in the ditch at sample point VH-1 D had a higher BOD than was anticipated by the visual observation made at the time of sampling.

At sample point WH 7.34 W, a storm sewer on Main Street West was discharging to a tributary of West Hawkesbury Creek. There was no flow in this watercourse upstream from the storm sewer outfall. The presence of sewage in this discharge was revealed by the sample results.

A high coliform content was revealed in the flow from the storm sewer on the east side of Highway 34 near the northern boundary of the town. Although a low volume of flow was evident at this

location (sample point number VH-2 W) on May 24, the presence of sewage was apparent.

SUMMARY

A water pollution survey of the Town of Vankleek Hill was performed by OWRC staff on May 24, 1966.

At the time of this survey, construction of municipal water works to serve part of the town was approaching completion. Chlorinated ground-water will be supplied to the system.

This survey has revealed that sewage disposal problems are extensive in Vankleek Hill, as is indicated by the sewage present in flows discharging to watercourses. When such problems can be corrected by providing adequate facilities on a private basis, the provision of public sewage works is unnecessary. In this instance it is doubtful that private measures would be successful and it is evident that public sanitary sewers and sewage treatment works will be necessary to alleviate pollution problems.

RECOMMENDATION

Active consideration should be given to the construction of public sewage works at Vankleek Hill.

Approved by: _____


L. G. South,
District Engineer,
Division of Sanitary Engineering.

Prepared by: R. G. Barrens

mh

INTERPRETATION OF ANALYSES

The analyses employed to determine the quality of samples were: biochemical oxygen demand (BOD), solids, and bacteriological examination.

The BOD of sewage or polluted water is the oxygen required during stabilization of the decomposable organic or chemical material by aerobic biochemical action. A five-day BOD determination with incubation at 20 degrees Centigrade is reported. The BOD of a watercourse should not exceed four parts per million (ppm).

The analyses for solids include tests for total, suspended and dissolved solids. The results are reported in parts per million. The first test measures both the solids in solution and in suspension. The test for suspended solids indicates the measure of undissolved solids of organic or inorganic nature in suspension. Significant causes of suspended solids in watercourses are land erosion and waste discharges. The dissolved solids are a measure of those solids in solution.

The water samples were subjected to bacteriological examination since the presence of coliform organisms is used frequently as an index of faecal pollution in water. The samples were examined at the Ottawa Regional Laboratory of the Ontario Department of Health. The Most Probable Number (M.P.N.) method was used to determine the number of coliform organisms per 100 cubic centimetres of the water sample. Although the presence of coliforms indicates pollution from

human or animal excrement, or from some non-faecal sources, E. coli organisms are members of the coliform group and originate in the intestinal tract of humans and other warm-blooded animals. It is an OWRC objective that the presence of coliforms in a watercourse should not exceed 2,400 organisms per 100 ml. of water.

TOWN OF VANKLEEK HILL

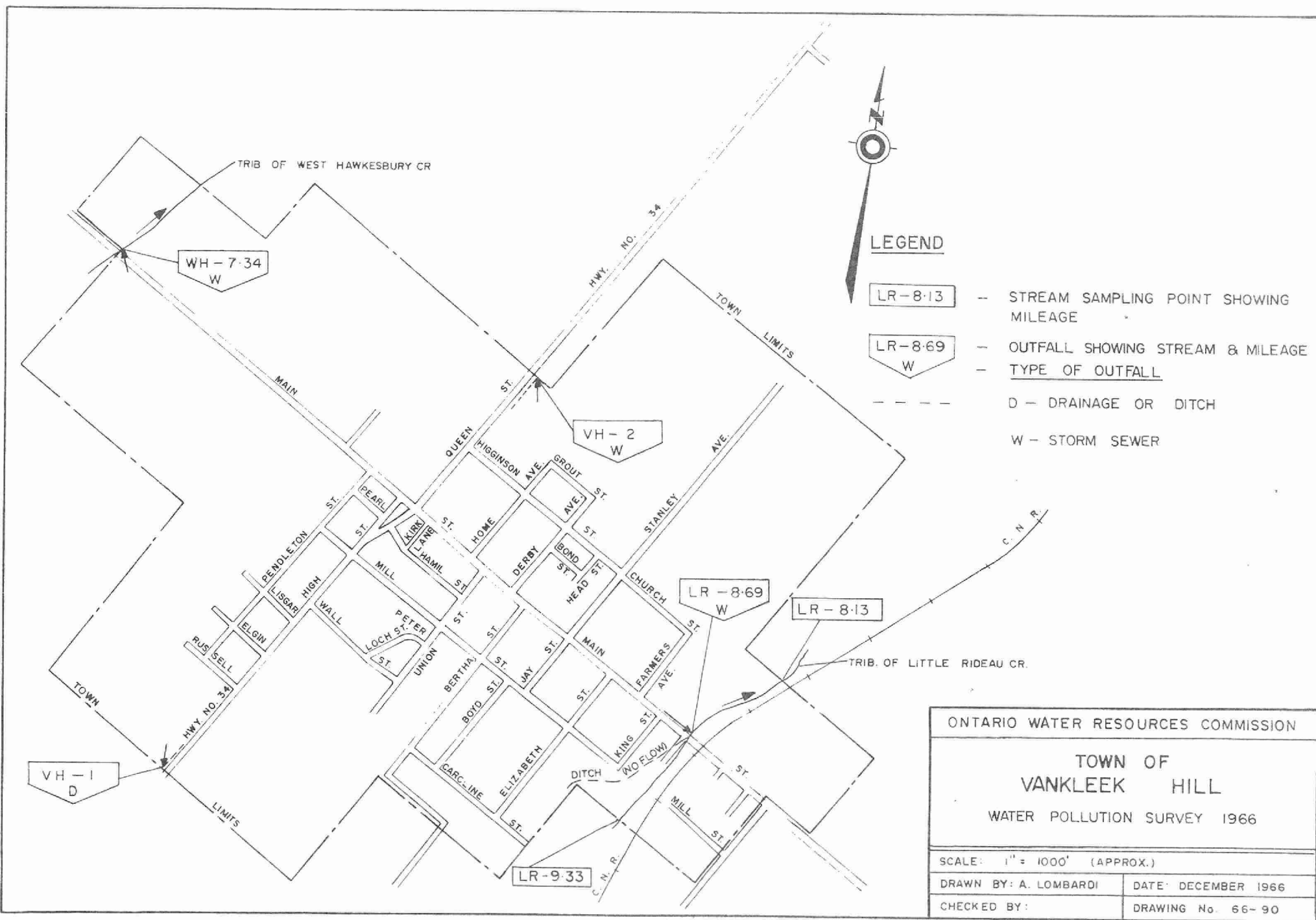
WATER POLLUTION SURVEY

Date Sampled: May 24, 1966

BACTERIOLOGICAL
EXAMINATION

<u>Sample Point No.</u>	<u>Description</u>	<u>5-Day BOD</u>	<u>S O L I D S</u>			<u>M.P.N. per 100 c.c.</u>	
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>	<u>Total Coliforms</u>	<u>E. Coli</u>
LR-9.33	Tributary of Little Rideau Creek at upstream limit of Vankleek Hill	2.6	422	3	419	430	23
LR-8.69 W	Storm sewer discharge to Little Rideau Creek at Main Street (east)	64.0	764	80	684	11,000+	11,000+
LR-8.13	Tributary of Little Rideau Creek at downstream limit of town	5.2	552	18	534	11,000+	11,000+
VH-1 D	Ditch on west side of Highway 34 conducting discharge westward from town	7.8	554	8	546	1,500	23
WH-7.34 W	Storm sewer discharging to West Hawkesbury Creek at Main Street(west)	20.0	674	25	639	11,000+	11,000+
VH-2 W	Storm sewer on east side of Highway 34 discharging northward from town	---	---	---	---	11,000+	11,000+

NOTE: All analyses except pH reported in ppm
unless otherwise indicated.



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